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ABSTRACT

Results are reported for South Carolina students for the four tests of the American College Test (ACT) (English, mathematics, reading, and science reasoning) and the ACT composite. In 1998, the average composite score for the 995,039 graduating seniors in the United States was 21.0. In South Carolina, for the 5,385 students who took the ACT, the average composite score was 19.0. In South Carolina, the average composite score was higher for females (19.1) than for males (18.9). For all tests and the composite, the average scores for White students were higher than for African American students. In general, students who completed the core courseware defined by the ACT tended to have higher average scores than students who did not. Average composite scores by state are shown with the quartile values for students who did and did not complete the core curriculum. Recommendations to improve the performance of South Carolina's students center on taking college preparatory courses early in their high school years. (Contains 12 tables.) (SLD)

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DATA UPDATE

South Carolina Department of Education — August 1998

ED 433 363

1998 Results of the American College Test (ACT)

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DATA UPDATE

South Carolina Department of Education — Barbara S. Nielsen, Ed.D., State Superintendent
Divisions of Development and Education Initiatives/Offices of Research and Standards and Professional Development — August 1998

1998 Results of the American College Test (ACT)

The American College Test (ACT) is taken by high school students seeking college admission. The ACT predicts freshman college success; students with higher scores on the ACT usually make higher grades in college. Colleges use tests such as the ACT or the Scholastic Assessment Test (SAT) along with other information to make admissions decisions.

The ACT includes four tests:

- ⇒ **English Test - - 75 questions/45 minutes**
- ⇒ **Mathematics Test - - 60 questions/60 minutes**
- ⇒ **Reading Test - - 40 questions/ 35 minutes**
- ⇒ **Science Reasoning Test - - 40 questions/35 minutes**

(Total testing time: 2 hours, 55 minutes)

Results are reported for the four tests and a composite score. The score scale for each ACT subject area, and the composite, is between 1-36. In 1998, the average composite score of the 995,039 graduating seniors in the nation who took the ACT was 21.0; in South Carolina, for the 5,385 students who took the ACT, the average composite score was 19.0.

ACT Average Scores for Subject Area and Composite
South Carolina and the Nation
1997-98

Reference Group	Number of Students	English	Math	Reading	Science Reasoning	Composite
South Carolina	5,385	18.4	18.8	19.4	19.0	19.0
Nation	995,039	20.4	20.8	21.4	21.1	21.0

Five-year trend data for the graduating seniors who took the ACT in the Nation and in South Carolina are presented on the next page.

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ACT Average Scores for Subject Area and Composite
South Carolina and the Nation
1993-94 to 1997-98

Year	# of Students	English	Math	Reading	Science Reasoning	Composite
SOUTH CAROLINA						
1993-94	3,826	18.6	18.8	19.3	19.1	19.1
1994-95	5,233	18.6	18.8	19.3	19.2	19.1
1995-96	4,648	18.5	18.8	19.4	19.2	19.1
1996-97	4,994	18.1	18.9	19.1	19.0	18.9
1997-98	5,385	18.4	18.8	19.4	19.0	19.0
NATION						
1993-94	891,714	20.3	20.2	21.2	20.9	20.8
1994-95	945,369	20.2	20.2	21.3	21.0	20.8
1995-96	924,663	20.3	20.2	21.3	21.1	20.9
1996-97	959,301	20.3	20.6	21.3	21.1	21.0
1997-98	995,039	20.4	20.8	21.4	21.1	21.0

The next two tables show 1998 ACT data by gender and ethnicity. In South Carolina, the average composite score was higher (19.1%) for females than for males (18.9%). Female students scored higher on English and Reading, and male students scored higher on Mathematics and Science Reasoning (see the table below). For all tests and the composite, the average scores for white students were higher than for African-American students (see the table on page 3).

ACT Average Scores for Subject Area and Composite by Gender
South Carolina and the Nation
1998

Gender	# of Students	English	Math	Reading	Science Reasoning	Composite
SOUTH CAROLINA						
Males	1,933	17.6	19.3	18.9	19.4	18.9
Females	3,452	18.8	18.6	19.7	18.8	19.1
NATION						
Males	430,724	19.9	21.5	21.1	21.8	21.2
Females	564,315	20.8	20.2	21.6	20.6	20.9

ACT Average Scores for Subject Area and Composite by Ethnicity South Carolina and the Nation 1998						
Ethnicity	**# of Students**	**English**	**Math**	**Reading**	**Science Reasoning**	**Composite**
SOUTH CAROLINA						
African Am.	1,954	15.3	16.4	16.4	16.5	16.3
White	2,798	20.4	20.3	21.3	20.6	20.8
NATION						
African Am.	100,537	16.4	16.9	17.2	17.3	17.1
White	707,496	21.2	21.4	22.1	21.8	21.7

According to the ACT, "The academic preparation a student receives in high school correlates with success in college. ACT research indicates that students who prepare academically by taking a core high school program consistently score higher on the ACT assessment than those who do not. These same students also earn better grades in college. These facts underscore the value of a strong basic program of study in high school."•

ACT reports average scores for students taking the "core or more" and taking "less than the core." ACT defines this coursework as follows.

Core or More•

A core or more program is defined as a typical college preparatory program including:

⇒ **English** (four years or more)
One-year credit each for English 9, English 10, English 11, English 12

⇒ **Mathematics** (three years or more)
One-year credit each for Algebra I, Algebra II, Geometry

One half-year credit each for Trigonometry, Calculus (not Pre-Calculus), other Math courses beyond Algebra II, Computer Math/Computer Science

⇒ **Social Studies** (three years or more)
One-year credit each for American History, World History, American Government

One half-year credit each for Economics, Geography, Psychology, other History (European, State, etc.)

• "ACT Assessment 1997 Results, Summary Report, South Carolina," published by The American College Testing Program.

⇒ **Natural Sciences** (three years or more)
One-year credit each for General/Physical/Earth Science, Biology, Chemistry, Physics

Less Than Core

A less-than-core program refers to any high school program consisting of fewer courses than those included in "core or more."

The average ACT scores in English, Mathematics, Reading, Science Reasoning and the Composite for 1998 seniors who completed a core curriculum and for those who did not are shown in the following two tables. In general, students who completed core coursework tended to have higher average scores than students who did not.

ACT Average Scores for Subject Area and Composite by Coursework

South Carolina and the Nation
1998

Reference Group	Core or More					Less Than Core				
	E	M	R	SR	C	E	M	R	SR	C
South Carolina	19.2	19.6	20.2	19.7	19.8	16.0	16.8	17.2	17.3	16.9
Nation	21.5	22.0	22.4	22.0	22.1	18.6	18.9	19.7	19.6	19.3

E=English, M=Mathematics, R=Reading, SR =Science Reasoning, C=Composite

ACT Average Scores for Subject Area and Composite by Coursework and by Ethnicity

South Carolina
1998

South Carolina Reference Group	Core or More					Less Than Core				
	E	M	R	SR	C	E	M	R	SR	C
African Am.	16.2	17.2	17.3	17.2	17.1	13.8	15.1	14.9	15.5	14.9
White	20.9	20.9	21.8	21.0	21.3	18.5	18.4	19.7	19.1	19.1

E=English, M=Mathematics, R=Reading, SR =Science Reasoning, C=Composite

No score data are provided by The American College Testing Program for the reference group "other" (American Indian/Alaskan Native, Asian American/Pacific Islander, and Hispanic graduates) since fewer than 500 took the ACT in South Carolina.

This set of tables compares average ACT scores for South Carolina, the region and the nation.

ACT Average Scores for Subject Area and Composite by Coursework
South Carolina, SACS Region* and Nation - 1998

Reference Group	English	Math	Reading	Science Reasoning	Composite
South Carolina	18.4	18.8	19.4	19.0	19.0
Region	19.6	19.6	20.4	20.0	20.0
Nation	20.4	20.8	21.4	21.1	21.0

ACT Average Scores for Subject Area and Composite by Coursework
South Carolina, SACS Region* and Nation - 1998

Core or More - 4,3,3,3 and Above

Reference Group	English	Math	Reading	Science Reasoning	Composite
South Carolina	19.2	19.6	20.2	19.7	19.8
Region	20.7	20.6	21.4	20.8	21.0
Nation	21.5	22.0	22.4	22.0	22.1

4,3,3,3 = 4 years of English and 3 years each of Mathematics, Social Studies and Natural Sciences

ACT Average Scores for Subject Area and Composite by Coursework
South Carolina, SACS Region* and Nation - 1998

Less than Core - In Between and 4,2,2,2 and Below

	In Between					4,2,2,2 and below				
Reference Group	E	M	R	SR	C	E	M	R	SR	C
South Carolina	16.7	17.2	17.7	17.6	17.4	15.1	16.2	16.3	16.7	16.2
Region	17.9	17.7	18.7	18.6	18.4	15.9	16.5	17.1	17.3	16.8
Nation	19.1	19.2	20.1	20.0	19.7	17.2	17.9	18.5	18.8	18.2

E=English, M=Mathematics, R=Reading, SR =Science Reasoning, C=Composite
In Between = Any pattern of courses less than "4,3,3,3 and above" and more than "4,2,2,2 and below"
4,2,2,2 = 4 years of English and 2 years each of Mathematics, Social Studies and Natural Sciences

*Southern Association of Colleges and Schools. States included in SACS: Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas and Virginia.

The American College Testing Program has published ACT average composite scores by state for the 1998 ACT-tested graduates. The listing was published with the following caution: "The accompanying list of average scores should not be interpreted as providing grounds for an explicit or implicit ranking of the various states' education systems. Students who take the ACT Assessment are self-selected and do not represent the entire student population."**

** "Cautions on the Use of State Aggregate ACT Scores," published by The American College Testing Program.

The table below presents the relationship between average ACT scores and annual family income levels.

ACT Average Composite Scores by Annual Family Income 1998

Reference Group	Less than $18,000		$18,000 - $35,999		$36,000 or More	
South Carolina	Number	Composite	Number	Composite	Number	Composite
Total Group	716	16.7	1,324	17.9	2,316	20.5
Core	472	17.5	910	18.7	1,835	21.0
Less than Core	237	15.2	407	15.9	468	18.6
Nation	Number	Composite	Number	Composite	Number	Composite
Total Group	92,562	18.5	217,121	20.0	530,981	22.0
Core	48,614	19.5	126,593	21.0	354,544	22.8
Less than Core	42,584	17.3	88,368	18.5	172,714	20.2

The table below compares percentages of students choosing selected academic majors in 1994, 1996, and 1998.

Percentages Choosing Selected Majors By Graduation Year and Gender

	Men		Women		Total	
	SC	Nation	SC	Nation	SC	Nation
Business						
1994	11	14	10	13	11	13
1996	13	14	12	12	12	13
1998	15	14	12	11	13	12
Computer/Information						
1994	4	3	2	1	3	2
1996	6	4	3	1	4	3
1998	6	6	3	2	4	3
Education						
1994	7	5	14	12	11	9
1996	6	5	13	12	11	9
1998	6	5	13	13	11	10
Engineering						
1994	20	17	5	3	11	9
1996	21	17	5	3	10	9
1998	20	17	4	3	9	9
Health Profession						
1994	12	13	30	26	23	20
1996	11	13	31	27	24	21
1998	9	11	28	26	22	20

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ACT Average Co
1998 ACT

State	Average Composite Score	Total				Co
		% of Graduates Tested*	Quartile Values			% Tot Tes
			25th	50th	75th	
Alabama	20.1	64	16.7	19.6	23.2	6
Alaska	21.3	37	17.2	21.5	25.2	4
Arizona	21.4	29	17.9	21.2	24.7	7
Arkansas	20.4	68	16.9	19.9	23.6	7
California	21.2	12	17.5	21.0	24.7	6
Colorado	21.6	63	18.2	21.4	24.7	5
Connecticut	21.8	3	18.3	21.8	25.2	4
Delaware	21.3	4	17.5	20.9	24.9	6
Washington DC	17.6	10	14.5	16.4	19.5	6
Florida	20.8	39	17.2	20.4	24.0	7
Georgia	20.2	16	16.6	19.8	23.4	7
Hawaii	21.6	18	17.7	21.4	25.2	6
Idaho	21.5	63	18.1	21.1	24.5	5
Illinois	21.4	69	17.6	21.0	24.9	5
Indiana	21.4	20	17.9	21.1	24.6	6
Iowa	22.1	65	18.9	21.9	25.2	6
Kansas	21.7	74	18.2	21.4	25.0	5
Kentucky	20.2	67	16.8	19.7	23.2	4
Louisiana	19.5	76	16.0	19.0	22.4	6
Maine	22.0	4	18.7	22.0	25.0	3
Maryland	20.9	10	17.0	20.6	24.4	7
Massachusetts	21.6	5	18.2	21.4	25.0	4
Michigan	21.3	68	17.8	21.0	24.5	5
Minnesota	22.2	63	18.9	21.9	25.3	7
Mississippi	18.7	81	15.3	17.9	21.4	6
Missouri	21.5	66	18.0	21.1	24.8	6

* Totals for graduating seniors were obtained from *Projections of High Scl Graduates by State and Race/Ethnicity 1996-2012*, Copyright © by West Interstate Commission for Higher Education, February, 1998.

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mposite Scores by State
Tested Graduates

e Completers				Non-Core Completers				No Course Data
of al sted*	Quartile Values			% of Total Tested*	Quartile Values			Percent of Total Tested*
	25th	50th	75th		25th	50th	75th	
5	18.1	21.0	24.4	33	14.9	17.2	19.8	2
3	21.0	24.1	27.3	25	17.6	20.8	23.9	32
0	18.8	22.0	25.3	27	16.4	19.2	22.6	3
5	17.8	20.8	24.2	20	14.9	17.2	20.3	5
5	18.5	22.0	25.5	31	15.8	18.8	22.4	4
8	19.6	22.6	25.7	39	16.7	19.5	22.8	3
0	19.2	22.3	25.5	41	17.6	21.2	24.8	20
7	18.8	21.9	25.5	31	16.0	18.2	22.7	2
6	14.6	16.5	19.8	28	14.3	16.0	18.8	7
1	18.3	21.4	24.9	24	15.1	17.6	20.7	5
6	17.4	20.5	24.1	19	14.6	16.9	20.1	5
8	18.7	22.2	25.8	26	15.8	18.9	23.3	6
0	19.5	22.5	25.9	47	17.0	19.6	22.9	3
2	19.5	22.8	26.2	46	16.2	19.1	22.7	2
0	19.2	22.4	25.8	35	16.3	19.0	22.0	5
8	20.1	23.0	26.1	31	17.0	19.5	22.5	2
5	20.0	23.1	26.3	43	16.7	19.4	22.5	2
3	17.8	20.7	24.2	55	16.2	19.0	22.4	2
9	17.2	20.0	23.5	28	14.4	16.4	19.0	3
8	19.9	22.9	25.2	51	18.1	21.7	24.7	11
1	17.6	21.1	24.8	24	15.7	18.8	23.0	5
5	18.6	21.7	25.2	41	17.8	21.2	24.8	13
8	19.2	22.4	25.8	40	16.5	19.2	22.3	2
1	19.7	22.6	25.8	26	17.2	19.9	23.2	3
2	16.3	19.2	23.0	36	14.2	16.1	18.5	2
1	19.4	22.5	26.0	36	16.3	18.9	22.1	3

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ACT Average Co
1998 ACT-

State	Average Composite Score	Total % of Graduates Tested*	Quartile Values 25th	50th	75th	Cor % Tot Tes
Montana	21.9	56	18.7	21.7	25.0	58
Nebraska	21.8	71	18.4	21.5	25.0	67
Nevada	21.4	43	18.0	21.1	24.5	64
New Hampshire	22.5	4	18.9	22.2	25.8	51
New Jersey	20.7	4	17.3	20.2	23.9	36
New Mexico	20.1	65	16.6	19.6	23.3	53
New York	22.0	15	18.5	22.0	25.4	64
North Carolina	19.4	12	15.7	18.6	22.4	65
North Dakota	21.4	78	18.1	21.1	24.3	64
Ohio	21.4	60	18.0	21.1	24.5	63
Oklahoma	20.5	69	17.1	20.1	23.6	53
Oregon	22.7	12	19.4	22.6	26.0	60
Pennsylvania	21.4	7	17.9	21.1	24.8	68
Rhode Island	22.2	2	18.9	22.2	25.2	45
South Carolina	19.0	14	15.4	18.3	22.0	70
South Dakota	21.4	70	18.2	21.1	24.3	65
Tennessee	19.8	77	16.2	19.2	22.9	63
Texas	20.3	32	16.9	19.9	23.4	69
Utah	21.6	68	18.2	21.3	24.8	4
Vermont	22.0	7	18.8	22.0	25.0	4
Virginia	20.7	6	17.2	20.4	23.9	6
Washington	22.6	18	19.2	22.4	25.8	5
West Virginia	20.1	60	16.9	19.6	22.8	4
Wisconsin	22.3	66	19.1	22.1	25.3	6
Wyoming	21.4	65	18.2	21.1	24.4	5
National	**21.0**	**37**	**17.5**	**20.7**	**24.3**	**6**

* Totals for graduating seniors were obtained from *Projections of High Sch Graduates by State and Race/Ethnicity 1996-2012*, Copyright © by West Interstate Commission for Higher Education, February, 1998.

mposite Scores by State
Tested Graduates

e Completers				Non-Core Completers				No Course Data
f al ted*	Quartile Values			% of Total Tested*	Quartile Values			Percent of Total Tested*
	25th	50th	75th		25th	50th	75th	
	20.2	23.0	26.2	40	17.1	19.7	22.8	2
	19.6	22.5	25.8	32	16.6	19.3	22.4	2
	19.1	22.0	25.2	33	16.4	19.3	22.5	3
	20.0	22.8	25.9	34	17.9	21.3	26.0	15
5	18.1	21.0	24.3	57	17.0	19.8	23.4	7
3	17.9	21.0	24.6	44	15.4	18.1	21.4	3
1	20.2	23.3	26.4	29	16.2	18.9	22.2	7
5	16.7	19.7	23.5	31	14.4	16.7	19.7	4
4	19.7	22.4	25.4	34	16.3	18.7	21.5	3
3	19.4	22.3	25.6	35	16.4	18.9	22.0	2
3	18.5	21.6	25.0	44	15.9	18.5	21.6	4
0	20.6	23.7	27.0	37	17.8	20.7	24.0	3
3	18.9	22.0	25.4	27	16.1	19.2	23.0	5
5	19.5	22.4	25.4	47	18.0	22.1	25.0	8
0	16.3	19.2	22.8	26	13.9	16.0	19.0	5
5	19.2	22.0	25.1	33	16.5	19.4	22.4	2
3	17.4	20.4	24.0	35	14.7	17.2	20.4	2
9	18.0	20.9	24.3	28	15.1	17.4	20.4	3
5	19.4	22.4	25.7	53	17.5	20.3	23.8	2
4	20.0	22.7	25.1	47	17.8	21.0	25.0	9
6	18.1	21.2	24.6	26	15.6	18.4	22.0	7
7	20.3	23.3	26.5	41	18.1	21.1	24.6	2
5	18.3	20.9	24.0	53	16.1	18.6	21.7	2
2	20.0	22.8	26.0	36	17.7	20.7	23.9	2
5	19.5	22.3	25.4	43	17.0	19.6	22.7	2
1	18.7	21.9	25.3	36	16.0	18.7	22.1	3

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RECOMMENDATIONS

1. Students planning to attend four-year higher education institutions must take rigorous courses in the recommended subject areas (core) and earn at least 24 units of credit before graduating from high school. Students need to take the PLAN (pre-ACT) in 10th grade to help prepare for taking the ACT in 11th and 12th grades.

2. Students need to work with teachers in analyzing their PLAN test results to identify strong and weak areas, and focus on improving skills in those identified weaker areas to be better prepared in taking the ACT.

3. Local school districts and schools need to review, analyze and study their PLAN test results. Efforts need to focus on curriculum alignment and improving instruction in the identified weaker areas to better prepare students for taking the ACT.

4. Statewide, schools need to pay particular attention to aligning curriculum and improving instruction in critical reading, including comprehension, vocabulary, reasoning in literature, humanities, natural sciences and social sciences. Attention needs to focus on punctuation, sentence structure, grammar and usage, organization, style and strategy as they relate to reading and writing skills.

5. In addition, schools need to focus attention on content standards and skills in algebra I and II; geometry; trigonometry, calculus, physical science, biology, chemistry, physics and the Tech-Prep applied academic courses. The Math/Science "HUBS" can provide technical assistance to schools to strengthen mathematics and science teaching. Local schools and "HUBS" need to partner in maximizing the staff and resources of the "HUBS."

6. The South Carolina Department of Education has begun identifying curriculum alignment teams and developing a self-study curriculum checklist for middle and high schools to use in preparing for curriculum alignment team visits. These teams will determine the extent to which courses are rigorous, the implementation of the grade-by-grade and end-of-course standards, the use of the curriculum frameworks, the integration of technology into the curriculum and the knowledge and skills tested on the ACT. These teams will work with faculties to ensure the curriculum is aligned to the new standards and assessment.

7. Students need to begin taking college-preparation courses early in their high school years. For some students those courses could begin in middle school. By beginning early, students can be better prepared for college admissions tests (ACT) and college-level curriculum.

RECOMMENDATIONS

8. Parents and educators must develop high student expectations and standards relative to student learning. Parents/educators should insist that students take the most challenging and rigorous courses in high school to prepare for higher education institutions. Parents must insist that their children have access to rigorous courses in high school, and schools must offer a curriculum that reflects rigor and high standards.

9. Schools need to ensure that all curriculum areas including the Tech-Prep applied academic courses are rigorous and emphasize application of knowledge and technology.

10. For several years, the South Carolina Department of Education has published comparisons between course-taking patterns of students and their ACT scores. Students need to be enrolled in those core courses identified by ACT (4 years of English; 3 or more years of mathematics, including algebra I and II; geometry, trigonometry, and calculus; 3 or more years of social sciences, including world/American/European history, government/economics, geography; 3 or more years of natural sciences, including physical/earth science, biology, chemistry and physics).

11. Four-year higher education institutions in South Carolina need to continue reviewing and raising admissions standards, admitting those students who have earned at least 24 or more units in high school and who have at least a "C" average.

12. Students need to know there are financial rewards for those achieving academic excellence. Students planning to attend a four-year higher education institution in South Carolina can earn a $2,000 LIFE Scholarship by graduating from high school with a "B" average and scoring 1000 or better on the SAT or 21 or more on the ACT. Students attending a two-year higher education institution can earn a $1,000 LIFE Scholarship.